



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,925	11/30/2000	Jack M. Holtzman	PA010028	6380
23696	7590	05/07/2004	EXAMINER PHAN, MAN U	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			ART UNIT 2665	PAPER NUMBER 8
DATE MAILED: 05/07/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/727,925

Applicant(s)

HOLTZMAN ET AL.

Examiner

Man Phan

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,14,16,17 and 19 is/are rejected.
- 7) ☒ Claim(s) 2,5,15 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The application of Holtzman et al. for a "method and apparatus for transmitting data traffic in a wireless communication channel " filed 11/30/2000 has been examined. Responsive to the restriction requirement filed on 03/17/2004, affirmation of the election has been made by applicant, and a provisional election was made with traverse to prosecute the invention of group I, claims 1-6 and 14-19. Claims 7-13 and 20-25 are withdrawn from further consideration by the Examiner, 37 C.F.R. ' 1.142(b), as being drawn to a non-elected invention. Claims 1-6 and 14-19 are pending in the application.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

The status of the related application USSN 08/743,688 noted on pages 4 and 22, lines 7 and 11 respectively need to be updated. This application is now US Patent 5,933,462.

The "(IP) network 18" described on page 8, line 28 should change to —(IP) network 24— in accordance with the drawing.

The status of the related application USSN 08/931,535 noted on page 14, line 18 need to be updated. This application is now US Patent 6,377,809.

The status of the related application USSN 09/519,004 noted on page 15, line 29 need to be updated. This application is now US Patent 6,564,042.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 6 and 14, 16, 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashima (US#5,065,398) in view of Scholefield et al. (US#5,742,592).

With respect to claims 14, 16, 17, 19, Takashima disclose in Figs. 3A&B a transmission packet data used in Satellite communication system, in which the data payload 3-2, 3-3 is divided into a plurality of subpackets including the preambles (header) and data (datum) subpackets, and the subpacket information indicating the sequential number of each subpacket in the subpackets is added to the subpacket.. By dividing data to be transmitted into a plurality of subpackets and then transmitting the subpackets, the hub station can be accessed in the same way as the conventional scheme wherein a plurality of reservation packets are transmitted. By adding subpacket information (preamble) to each subpacket, the hub station can discriminate the number of subpackets which could not be successfully received and the number of subpackets which

have not yet been transmitted and can perform time slot assignment for reservation access (Col. 3, lines 21 plus; and Col. 11, lines 65 plus).

However, Takashima does not disclose expressly the step of sequentially transmitting the subpackets in accordance with predetermined time delays, and channel conditions. In the same field of endeavor, Schlefield et al.(US#5,742,592) discloses a method and system for allocating one or more subchannels based on priority of user data. Schlefield teaches in Fig. 2 a block diagram illustrating a MAC layer packet fragmentation and interleaving, in which a user packet 205 can be logically considered a series of MAC layer PDUs (*packet data units*). In the case of GPRS, the length of each PDU is determined by the amount of data capable of transmission in a single burst/time slot period. Thus, in a prior art approach a first PDU "A" would be sent in a first time slot of a first frame (each frame having 8 time slots), the second PDU "B" would be sent in the first time slot of the second frame, and so on until all PDUs are sent. Since this approach has limited bandwidth, another approach proposed is that of assigning plural time slots and *sequentially transmitting the PDUs*. Thus, for example, if time slots 1 and 2 were assigned, PDU "A" would be sent in time slot 1 of frame 1, PDU "B" in time slot 2 of frame 1, PDU "C" in time slot 1 of frame 2, and so on (*sequentially transmitting the PDUs*). The present embodiment improves on these approaches by further segmenting the packet 205 into plural SDUs (service data units, e.g., 211, 212 and 213), each SDU for transmission in a designated subchannel (as further shown by Fig. 3, where the PDUs being sent in time slot 2 of channel 305 make up a MAC layer subchannel SDU 310). Thus, the actual transmission sequence 220 in the illustrated case is SDU 211 in time slot 1, SDU 212 in time slot 2, and SDU 213 in time slot 3. In doing so, the PDUs are effectively interleaved, thus providing for greater

Art Unit: 2665

immunity to fading while permitting increased throughput via multiple subchannels. Upon reception, the plural PDUs is defragmented and error corrected into a replica of the original data packet (Col. 3, lines 46 plus).

Regarding claims 1, 3, 4, 6, they are method claims corresponding to the apparatus claims 14, 16, 17, 19 above. Therefore, claims 1, 3, 4, 6 are analyzed and rejected as previously discussed with respect to claims 14, 16, 17, 19.

One skilled in the art would have recognized the need for effectively and efficiently scheduling data packet transmissions during optimal channel conditions in the forward link CDMA communication, and would have applied Scholefield's teaching of the sequentially transmitting of subpackets into Takashima's novel use of the packaging a data payload into a plurality of subpackets in satellite communication. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Scholefield's method for communicating data in a wireless communication system into Takashima's TDMA satellite communication method and system with the motivation being to provide a method and system for a transmitting data traffic on a communication channel.

***Allowable Subject Matter***

5. Claims 2, 5 and 15, 18 are objected to as being dependent upon the rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

6. The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest the steps of transmitting the second portion of the plurality of subpackets is performed at a peak of a Rayleigh fading envelope, wherein the peak is determined through a threshold value; wherein the channel conditions are favorable if the Rayleigh fading envelope is above a predetermined threshold, as specifically recited in claims.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Odenwalder et al. (US#6,625,172) is cited to show the rescheduling scheduled transmissions.

The Razoumov et al. (US#6,711,208) is cited to show the estimation of traffic to pilot ratios.

The Holtzman et al. (US#6,657,980) is cited to show the method and apparatus for scheduling packet data transmissions in a wireless communication system.

The Scholefield et al. (US#5,752,193) is cited to show the method and apparatus for communicating in a wireless communication system.

The Ryan (US#6,134,261) is cited to show the FDD forward link beamforming method for a FDD communications system.

The Haartsen (US#6,021,124) is cited to show the multi-channel automatic retransmission query (ARQ) method.

The Raychaudhuri (US#4,745,599) is cited to show the random access communication system with contention scheduling of subpacketized data transmissions and scheduled retransmission of unsuccessful subpackets.

The Doshi et al. (US#5,222,061) is cited to show the data services retransmission procedure.

The Chen et al. (US#4,970,714) is cited to show the adaptive data link protocol.

The Tiedemann, Jr. et al. (US#6,396,867) is cited to show the method and apparatus for forward link power control.

The Stellakis (US#6,545,986) is cited to show the CDMA forward link power control.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (703)305-1029.

The examiner can normally be reached on Mon - Fri from 6:30 to 3:30.  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3988.



Art Unit: 2665

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

**10. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

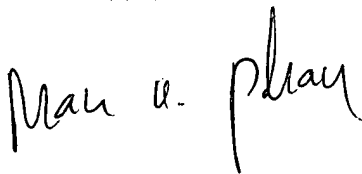
**or faxed to:** (703) 305-9051, (for formal communications intended for entry)

**Or:** (703) 305-3988 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Mphan

04/28/2004.



**MAN PHAM  
PATENT EXAMINER**